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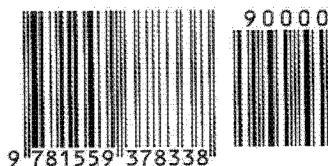
The IEEE Standard Dictionary of Electrical and Electronics Terms

Sixth Edition

**Standards Coordinating Committee 10, Terms and Definitions
Jane Radatz, Chair**

This standard is one of a number of information technology dictionaries being developed by standards organizations accredited by the American National Standards Institute. This dictionary was developed under the sponsorship of voluntary standards organizations, using a consensus-based process.

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The terms defined in this dictionary are listed in *letter-by-letter* alphabetical order. Spaces are ignored in this style of alphabetization, so *cable value* will come before *cab signal*. Descriptive categories associated with the term in earlier editions of IEEE Std 100 will follow the term in parentheses. New categories appear after the definitions (see Categories, below), followed by the designation of the standard or standards that include the definition. If a standard designation is followed by the letter s, it means that edition of the standard was superseded by a newer revision and the term was not included in the revision. If a designation is followed by the letter w, it means that edition of the standard was withdrawn and not replaced by a revision. A bracketed number refers to the non-IEEE standard sources given in the back of the book.

Acronyms and abbreviations are no longer listed in a separate section in the dictionary; rather, they are incorporated alphabetically with other terms. Each acronym or abbreviation refers to its expanded term, where it is defined. Acronyms and abbreviations for which no definition was included in past editions have been deleted from this edition of IEEE Std 100.

Abstracts of the current set of approved IEEE standards are provided in the back of the book. It should be noted that updated information about IEEE standards can be obtained at any time from the IEEE Standards World Wide Web site at <http://standards.ieee.org/>.

Categories

The category abbreviations that are used in this edition of IEEE Std 100 are defined below. This information is provided to help elucidate the context of the definition. Older terms for which no category could be found have had the category “Std100” assigned to them. Note that terms from sources other than IEEE standards, such as the National Electrical Code® (NEC®) or the National Fire Protection Association, may not be from the most recent editions; the reader is cautioned to check the latest editions of all sources for the most up-to-date terminology.

traveling-wave tube

frequency wave are propagated along the structure. *See also:* parametric device. (ED) [46]

traveling-wave tube An electron tube in which a stream of electrons interacts continuously or repeatedly with a guided electromagnetic wave moving substantially in synchronism with it, and in such a way that there is a net transfer of energy from the stream to the wave. *See also:* transverse-beam traveling-wave tube; transverse-field traveling-wave tube. (ED) 161-1971w

traveling-wave-tube interaction circuit An extended electrode arrangement in a traveling-wave tube designed to propagate an electromagnetic wave in such a manner that the traveling electromagnetic fields are retarded and extended into the space occupied by the electron stream. *Note:* traveling-wave tubes are often designated by the type of interaction circuit used, as in helix traveling-wave tube. (ED) 161-1971w

travel trailer A vehicular unit mounted on wheels, designed to provide temporary living quarters for recreational, camping, or travel use, of such size or weight as not to require special highway movement permits when drawn by a motorized vehicle, and with a living area of less than 220 sq ft, excluding built-in equipment such as wardrobes, closets, cabinets, kitchen units or fixtures) and bath and toilet rooms. *See also:* recreational vehicle. (NEC/NESC) [86]

traversable widget A widget that can receive input focus. (C) 1295-1993

traversal The process of enumerating or visiting each of the nodes of an ordered tree exactly once. *See also:* converse inorder traversal; converse postorder traversal; converse preorder traversal; inorder traversal; postorder traversal; preorder traversal; traversal order; traverse. (C) 610.5-1990

traversal order The order in which the nodes of a tree are visited in a traversal. (C) 610.5-1990

traverse To enumerate or to visit each of the nodes of an ordered tree exactly once. *See also:* traversal. (C) 610.5-1990

tray (storage battery) (storage cell) A support or container for one or more storage cells. *See also:* battery. (EEC/PE) [119]

TR box *See:* TR switch.

treated fabric (rotating machinery) A fabric or mat in which the elements have been essentially coated but not filled with an impregnant such as a compound or varnish. *Synonym:* treated mat. *See also:* rotor; stator. (PE) [9]

treated mat *See:* treated fabric.

treatment The systematic application of some agent (e.g., chemical, electric field) to a sample of organisms in an experimental setting for the purpose of determining the biological effect(s) of the agent. (PE/T&D) 539-1990

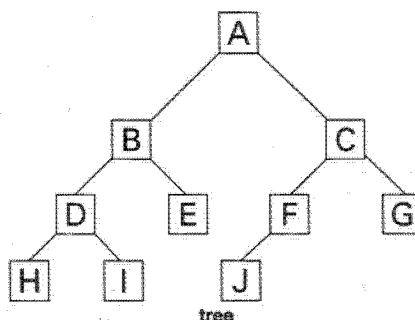
treble boost An adjustment of the amplitude-frequency response of a system or transducer to accentuate the higher audio frequencies. (SP) 151-1965w

tree (1) A set of connected branches including no meshes. *See also:* network analysis. (NIR) C95.1-1982s

(2) (software) An abstract hierarchical structure consisting of nodes connected by branches, in which: each branch connects one node to a directly subsidiary node; there is a unique node called the root which is not subsidiary to any other node; and every node besides the root is directly subsidiary to exactly one other node. (C/SE) 729-1983s

(3) (data management) A nonlinear data structure consisting of a finite set of nodes in which one node is called the root node and the remaining nodes are partitioned into disjoint sets, called subtrees, each of which is itself a tree. (See the corresponding figure.) *Note:* The nodes are connected by pointers. *Synonyms:* rooted tree; tree structure. *See also:* n - m tree; height-balanced tree; n -ary tree; null tree; ordered tree; search tree; subtree; threaded tree; unordered tree.

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tributary trunk

(C) 610.5-1990

treeing (composite insulators) Irreversible internal degradation by the formation of conductive carbonized paths. (PE/T&D) 987-1985w

tree insertion sort An insertion sort in which the items in the set to be sorted are treated as nodes on a tree. *Contrast:* tree selection sort. (C) 610.5-1990

tree machine A multiprocessor whose processing elements are connected in an n -ary tree arrangement. (C) 610.10-1994

trees and nodules Projections formed on a cathode during electrodeposition. Trees are branched whereas nodules are rounded. (EEC/PE) [119]

tree selection sort A selection sort in which the items in the set to be sorted are treated as nodes on a tree. *Contrast:* tree insertion sort. (C) 610.5-1990

tree structure (1) (data management) *See also:* tree. (C) 610.5-1990

(2) A set of connected segments with no loops (cross connections). 960-1993

tree topology A topology in which stations are attached in a tree layout fashion on a shared transmission medium. The tree layout begins at the head/end and each of these may have branches. The branches in turn may have additional branches to allow quite complex layouts. *See also:* bus topology; bus-ring topology; loop topology; ring topology; star topology; star-bus topology; star-ring topology. (C) 610.7-1995

tree wire A conductor with an abrasion-resistant outer covering, usually nonmetallic, and intended for use on overhead lines passing through trees. *See also:* armored cable; conductor. (PE/T&D) [10]

triad A group of three closely related items or digits. (C) 1084-1986w

trial operation A period during which the equipment or system is placed under service conditions and is also monitored for stable, smooth, and reliable performance. (PE/SUB) 1303-1994

triangular array *See:* triangular grid array.

triangular grid array A regular arrangement of array elements, in a plane, such that lines connecting corresponding points of adjacent elements form triangles, usually equilateral. (AP) 145-1993

triboelectric charging The generation of electrostatic charges when two pieces of material are brought into intimate contact and are then separated. *Synonym:* triboelectrification. (PE/PSPD) C62.47-1992

triboelectric series A list of substances in an order of relative positive to negative charging as a result of the triboelectric charging effect. (PE/PSPD) C62.47-1992

triboelectrification (electrification by friction) The mechanical separation of electric charges of opposite sign by processes such as: the separation (as by sliding) of dissimilar solid objects; interaction at a solid-liquid interface; breaking of a liquid-gas interface. (Std100) 270-1966w

tributary office A telephone central office that passes toll traffic to, and receives toll traffic from, a toll center. (EEC/PE) [119]

tributary trunk (data transmission) A trunk circuit connecting a local exchange with a toll center or other toll office through

Trichel streamers

which access to the lo

Trichel streamers (over noise) Streamers occur in regions of high electric field strengths at a gradient. A Trichel streamer is a moving purple fan. It has a short duration (in the high repetition rate (in

trickle charge (storage battery) A low rate of charge at a low rate and suitable to maintain a battery in a state of readiness. *Note:* This trickle charge is suitable not only for restoring a battery from time to time but also for floating.

trigonal system (piezoelectric) A system in which the symmetry axes are in general not coincident with the axes b and c , and a is also unequal. The a axis is perpendicular to the faces b and c (if necessary), the b axis has a direction parallel to c and a , the c axis has a direction parallel to a and b . The X , Y , Z axes with the a , b , c axes, r is normal to the ac plane, $+Z$ and $+X$ axes are positive. The $+Y$ axis is positive. The system with $+Z$ and $+X$ axes is a trigonal system.

trie An n -ary tree each of whose nodes is a sequence of the k -th digit or character. 1. A sequence of nodes starting from the root of a subtree rooted at the root of the tree. 2. The term is pronounced "re-trie-val." *See also:* trie search; radix tree.

Triex *See:* explosives.

trigatron (1) A triggered spark gap obtained by a voltage divider. This voltage divider is used for converting the sphere-gap voltage to a voltage suitable for triggering the spark gap. *See also:* electron device. (2) (radar) An electrostatically triggered spark gap.

trigger (1) To start action or to initiate for a period of time.

(2) A pulse used to initiate a triggered sweep or to refer to a waveform of a trigger pulse is derived from a trigger pulse. *See also:* oscilloscope. (3) (thyristor) The action of the off-state to the on-state.

(4) (A) To cause a circuit to perform some other operation that causes a circuit or

trigger circuit (1) A circuit with means for passing a signal under conditions are satisfied. (2) A sequential circuit in which one of which is stable,